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# DESIGNER SURFACES: ROBUST MONOLAYERS FOR BOTTOM-UP CONSTRUCTION OF FUNCTIONAL INTERFACES

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Covalently grafted films from diazonium salts are recognized as promising platforms for practical applications such as sensing, catalysis and molecular electronics.[1] A disadvantage of the method for some applications is that the usual film structure is a disorganised multilayer. Using a 'formation-degradation' approach[2] with bulky Boc and Fmoc protecting groups, we have developed routes for reliable preparation of carboxy- and amino-terminated monolayers on glassy carbon. The monolayers show excellent stability and reactivity for amide coupling and hence are useful tethers for building up complex interfaces.

In an extension of our methodologies, we have prepared monolayers containing two types of tethers, with orthogonal reactivity. We have also established an alternative route to two-component films which relies on reactions directly with the carbon surface. These strategies offer opportunities for controlled preparation of complex interfaces by further on-surface chemistry.

References

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